

STUDY OF PHYSICAL ABILITIES TESTING WITHIN THE HIRING PROCESS

EXECUTIVE DEVELOPMENT

BY: Mike McKendrick
Tucson Fire Department
Tucson, Arizona

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ABSTRACT

The problem was a substantial percentage of Tucson Fire Department recruit firefighters were terminated from employment during the recruit academy due to not meeting performance standards or due to physical injury occurring through standard day to day training operations. Additionally the department was preparing to embark on a large scale hiring over the next half decade. The purpose of this paper was to investigate and or substantiate the need for an improved validated pre-entry physical capability evaluation on the Tucson Fire Department. Descriptive and evaluative research was utilized for the study. Research included a review of contemporary data on legal and valid physical abilities evaluation instruments, a review of the forces impacting the validity of physical abilities evaluation instruments and a review to substantiate the need for the Tucson Fire Department to adopt a new process. The research questions were: Is a contemporary pre-entry physical ability evaluation necessary for the Tucson Fire Department entry level hiring process? Is there potential for negative consequences with the pre-entry physical ability evaluation currently in use by the Tucson Fire Department? Is there a more effective and efficient pre-entry physical ability evaluation instrument available, which is both legal and valid? Through the literature review and an opinion survey completed by 41 Tucson Fire Department recruit firefighters the study determined it is of the highest importance to place qualified and capable people on the public safety front line while at the same time being responsible to all recruitment groups, including ethnic, gender and physical disability, as well as being fiscally responsible. Thus

it was necessary to employ a contemporary physical agility test. There was a high probability of both fiscal and legal liability should the Tucson Fire Department continue with the process in place at the time of the study. As for a more effective and efficient pre-entry physical ability evaluation, the recommendation from this study was to adopt the IAFF/IAFC Candidate Physical Abilities Test, CPAT. The CPAT is preferred due to its scientific study, industry acceptance and Department of Justice acceptance.

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INTRODUCTION

The problem is that a substantial percentage of Tucson Fire Department recruit firefighters are terminated from employment during the recruit academy. This is due to the recruit not meeting performance standards or due to physical injury occurring through standard day to day training operations. Additionally, the Tucson Fire Department is preparing to embark on a large scale hiring over the next half decade. The purpose of this paper is to investigate and or substantiate the need for an improved validated pre-entry physical capability evaluation on the Tucson Fire Department. Descriptive and evaluative research is utilized for this study. Research includes a review of contemporary data on legal and valid physical abilities evaluation instruments, a review of the forces impacting the validity of physical abilities evaluation instruments and a review to substantiate the need for the Tucson Fire Department to adopt a new process. The research questions are:

1. Is a contemporary pre-entry physical ability evaluation necessary for the Tucson Fire Department entry level hiring process?
2. Is there potential for negative consequences with the pre-entry physical ability evaluation currently in use by the Tucson Fire Department?
3. Is there a more effective and efficient pre-entry physical ability evaluation instrument available, which is both legal and valid?

BACKGROUND AND SIGNIFICANCE

The significance of this problem to the Tucson Fire Department was three fold. The Tucson Fire Department anticipates hiring as many as 230 people within the next five years. This is due to growth and attrition. There is a high incidence of firefighter recruits not successfully completing the academy. The Department has a history of being highly scrutinized regarding the physical capability evaluations.

Emergency service personnel in Arizona are eligible to take retirement after twenty years of service. Nearly one third of the commissioned members of the Tucson Fire Department are eligible to retire at this time. The department experienced a tremendous growth and hiring trend in the mid to late 1970's and early 1980's. This trend was also seen in other professions throughout Southern Arizona during that same time. Nevertheless, many more positions are going to have to be filled besides just those vacancies within the fire department. Also competing will be positions as teachers, cops, civil engineers, accountants, mid-level managers, nurses, analysts, construction, etc. There will be immense competition for quality personnel who are capable of efficiently doing all aspects of the fire service job. Samuel M. Ehrenhalt, a senior fellow at the Rockefeller Institute of Government and author of a recent study of the aging state and local government work force presents that 42 percent of the 15.7 million people working for state and local government in 1999 were between 45 and 64 years old. In other words two fifths of state and local government employees will be eligible to retire in the next 15 years. Thus the issue of effectively filling a large

number of highly suspected vacancies is not unique to only the Tucson Fire Department.

Most major metropolitan fire departments have dealt with conflicts and criticism regarding physical capability or “agility” testing issues for quite some time. For the Tucson Fire Department (TFD) the chronology is as follows:

- 1979 TFD develops, validates and implements First Encounter Abilities Test (FEAT).
- mid 1980's FEAT modified to accommodate target recruitment groups
- late 1980's Civil action filed against department for FEAT being discriminatory
- late 1980's City manager abolishes fire department physical agility testing
- late 1980's Up to as high as 50% failure rate in recruit academies
- 1900 New Fire Incident Readiness Evaluation (FIRE) developed, validated and implemented.
- 1992 to numbers of successful recruits have improved but there remains a fairly standard 20% drop rate for failure to meet performance requirements or injury incurred in line of carrying out standard training activities.

The major issues involve putting qualified and capable people on the public safety front line while at the same time being responsible to all recruitment groups as well as being fiscally responsible. There is a tremendous expense to both the recruit and the department when a recently hired recruit is let go from

recruit training. For the recruit, he or she may have given up an established career elsewhere to take a chance on joining the fire service. Their families may rely on that paycheck for week to week sustenance. If they were hired on into a position without a valid means of knowing if they could actually survive, have they been done a costly injustice? For the department, there is the cost of recruitment, testing, tier one interviewing, tier two interviewing, background checks, medical evaluation and certification, outfitting in uniform and then finally wages and benefits. For each recruit who is let go there is a minimum wage and benefit expense of \$12,000. Expenses for an unsuccessful recruit can be as high as \$20,000. These are expenses incurred without the recruit being productive or offering any service to the department or the community. This study is of great significance to the Tucson Fire Department and the community it serves. There are three points of significance of this study to the Tucson Fire Department. The study will assist in substantiating the need to upgrade the candidate evaluation process. The study will identify what available physical capabilities evaluation instrument options are legal and valid. Third, the study will assist in developing policy for future hiring practices and serve as a model for future studies.

This applied research project is related to the Executive Development course beginning in module 2 in which research is defined as searching again or in the case of this study, reviewing and correlating what others have discovered regarding physical capabilities evaluation within a fire department hiring process.

Additionally, this study relates to the Executive Development course module 7 in it's examining of an organizations culture. In this case the culture of the fire service, the culture of the City of Tucson and finally the Tucson Fire Department. For the fire service as a whole, the assumption is that all emergency response personnel must be fit and capable of doing the job. The experience of the Tucson Fire Department is that although it has had a physical abilities evaluation tool within the hiring process, it did not produce the results; candidates capable and fit to do the job, as it was intended. In reference to module 8 of the Executive Development course, Ethics is defined as the study of standards of conduct and moral judgement. Further, public sector ethics are described as public sector officials being fiduciaries (persons to who property or power are entrusted for the benefit of another.) One might interpret this as the Tucson Fire Department is compelled to have a physical capabilities measurement instrument which is legal and valid and at the same time gives the candidate an accurate depiction of what will be required of them should they be hired. The ultimate ethical goal of a fire service hiring process should be to improve the quality of life of a community and all uniformed emergency responders. When a diverse group of physically qualified candidates become firefighters, and then participates in a comprehensive wellness/fitness program, the ethical goal is met and everyone wins. The community gets better service, the department improves its performance, and the firefighters enjoy long healthy careers and retirements. Nationally the required job skills of the modern firefighter are complex. It is feasible that in one shift a firefighter may be called upon to extinguish working

fires, mitigate a hazardous materials incident, provide emergency medical care to an adolescent victim, and support a grieving spouse of a dying patient. In addition, firefighters must interact frequently with community members during routine pre-fire inspections, community events, and school presentations. In order to accomplish these tasks successfully, it is necessary to have a well rounded, competent workforce made up of both genders and all races and ethnic backgrounds. In the past, many departments have incorrectly assumed that all types of people would be attracted to the fire service because of the nature of the job and its many benefits. Because of these false assumptions, some of these departments have been forced to take action according to consent decrees.

These judicial orders and reactive action have led to the abolishment of some job-related physical hiring tests resulting in the hiring of unqualified applicants. The greatest concern when developing a physical ability assessment instrument is that it measures the ability to physically perform physically demanding tasks and meet objective validity criteria. A test must be validated and accepted as a legally defensible and legitimate tool for assessing firefighter candidates. Any performance test must meet validity criteria established by the Equal Employment Opportunity Commission, the United States Department of Justice and the United States Department of Labor.

The National Fire Protection Association, whose members include architects, educators, physicians, fire chiefs and legislators is set to make a recommendation that could prompt fire departments to hire 30,000 more firefighters nationwide, an 11% increase. This is 30,000 that we must insure are

capable of carrying out the essential functions of a firefighter. This study aims to identify specific direction for the Tucson Fire Department to follow regarding the implementation and use of a pre-entry physical agility evaluation instrument.

LITERATURE REVIEW

This literature review will highlight the significance and impending need for a hiring process including a contemporary pre-entry physical ability evaluation that will be effective and contemporary.

The need for a pre-entry physical ability evaluation

The major issues involve putting qualified and capable people on the public safety front line while at the same time being responsible to all recruitment groups as well as being fiscally responsible. There is a tremendous expense to both the recruit and the department when a recently hired recruit is let go from recruit training. For the recruit, he or she may have given up an established career elsewhere to take a chance on joining the fire service. If they were hired on into a position without a valid means of knowing if they could actually survive, they been done a costly injustice. For the department, there is the cost of recruitment, testing, tier one interviewing, tier two interviewing, background checks, medical evaluation and certification, outfitting in uniform and then finally wages and benefits. The National Fire Protection Association is poised to make recommendations that could prompt fire departments to hire 30,000 more firefighters nation-wide, an 11% increase (Johnson 2001). For commercial enterprise, the usual measure of success is fairly straight forward: It is the bottom line – the profit. Each division and subdivision can be judged to a large extent by

its contribution to that profitability (Levatan, 2000). That is not true for fire departments because there is no such thing as profit and because the definition of bottom line differs among elected officials, employees, taxpayers, residents and business owners. Forty-two percent of the 15.7 million people working for state and local government in 199 were between 45 and 64 years old. In other words, two fifths of state and local government employees will be eligible to retire in the next 15 years, raising the specter of the most significant talent and drain ever experienced by government (Walters, 2000). In many fire departments including the Tucson Fire Department, the retirement age or requirement is much lower or less than that of the civilian government worker. (Gabriel, 2000)

Recently the Department of Health and Human Service confirmed that young Americans are less physically fit, or in no better condition, than young Americans of 20 or 30 years ago (Carmean, 1999). The process of attracting, recruiting, hiring, training and retaining new firefighters has evolved into a highly litigious arena (Davis,1998). As public safety officers, firefighters are charged with the safety of the populace they serve and must maintain an above average level of physical fitness, excellent health, and freedom from debilitating practices. The job of firefighter is labor intensive and requires individuals who are able to accomplish physical tasks at very strenuous levels (Esparza, 1993) Pre-hire physical fitness testing for fire service personnel is essential to identify those individuals who do not possess the physical strength necessary to perform the job requirements prior to undertaking the expense of hiring and training (Barnes, 1989)_

Historically, testing and training techniques are designed with male firefighters in mind. Male firefighters have a higher center of gravity and more upper body strength than women. By disregarding methods that consider male female differences, fire departments consequently overlook techniques that could be of benefit (FEMA/USA Fire Administration, 1996).

Effective and efficient pre-entry physical ability evaluations

For commercial enterprise, the usual measure of success is fairly straight forward: It is the bottom line – the profit. Each division and subdivision can be judged to a large extent by its contribution to that profitability (Levatan, 2000). That is not true for fire departments because there is no such thing as profit and because the definition of bottom line differs among elected officials, employees, taxpayers, residents and business owners.

According to the Americans with Disabilities Act of 1990, Public Law 101-336, it is unlawful to discriminate against qualified individuals with a disability by using qualification standards such as agility tests, employment tests or other selection criteria that screen out or tend to screen out an individual or class of individuals with disabilities unless the standard test or other selection criteria, as used by the covered entity, is shown to be job-related for the position in question and is consistent with business necessity (Breeding, 1993).

Within the ADA, employers can only make pre-employment inquiries into the ability of an applicant to perform job-related functions. If an applicant has a disability and is able to perform essential job tasks, the employer cannot reject the applicant for the non-relevant disability (Dezelan, 1991).

Highfill of the Springfield Oregon Fire Department found that there is a direct relationship between the legal issues brought forth in the courts and the ability of an organization to conduct a fair and equal physical agility entrance examination (Highfill,1990). Clark, Elk Grove Village Illinois Fire Department found that the vast majority of fire departments in the Chicago Illinois area administered and intended to continue to administer a physical ability test as part of the employment selection process. His literature review found that a physical ability test is needed to avoid hiring those that cannot perform essential job functions and also to avoid the potential liability associated with the same. Clark found the physical ability test is best conducted in the pre-employment selection process as it screens the applicant without jeopardizing his current employment (Clark, 1994).

The ability of management to select the particular employee for the specific job is a major factor in promoting company efficiency, growth, and earnings. In the highly competitive era, personnel selection is more important than ever before. McMurry presents that if well chosen and well placed, employees at all levels not only contribute to a smoother-running organization but also offer important potentials for future replacements and expansion (McMurry,1975).

As the fire chief and generally the hiring authority for a fire department, one has an obligation to your employees and citizens to carefully manage hiring decisions in such a manner as to avoid difficulties. Most courts agree that an employer has a duty to use due care in the selection and retention of employees, and that the

duty is owed to those people that employees will come in contact as a result of the employment (Diekman, 1992)

What else is available

Dr. Don T. Jacobs puts forth those criterion validated fitness tests should be utilized in lieu of task or simulation tests. This recommendation is based on the following:

Civilian candidates seeking employment in the fire service cannot practice most task-simulation tests.

Optimal efficiency in task simulations may require a degree of technical training and familiarity with equipment.

Simulated tasks may provide fitness education components in the way fitness tests do.

The criterion-validated fitness tests are easier to administer, safer, and less expensive than simulated task modules.

Only criterion-validated tests can be used for transportability validation.(Jacobs, 1990)

A valid test must have some power to predict success or failure (Davis, 1995)

Fire suppression is a unique vocation. Unlike most physically demanding occupations, firefighting is incident-driven, and few incidents are the same.

There is however, a core set of evolutions that meet the criteria of an essential function, including extinguishment, forcible entry, salvage and rescue operations.

There are also operating conditions that lend themselves to measurement, such as the energy cost of wearing a personal protective ensemble. Paul O. Davis,

Ph.D. presents that nearly one-third of a firefighter's reserve is tapped by having to perform a task while wearing the PPE (Davis, 1995).

In a paper presented to the Fire Service Medical Advisors Annual conference in 1995, Dr. Kevin Sykes, Principal Lecturer, Human Performance Laboratory, Chester College (Sykes, 1995) he evaluated a version of the fire service physical abilities test utilized in a large number of fire departments. In his study he found that the fire service step test is designed to assess cardio-respiratory fitness by prediction of aerobic capacity. This type of test can have up to a fifteen- percent error in two thirds of the population tested. The step test although highly portable and inexpensive for assessment of aerobic capacity is not well suited to situations where accuracy is required and where pass/fail criteria have to be met. Additionally the Vo2 Max required in the step test is less than that required for successful completion of a job related test developed under Scandinavian research. The research at Astrand & Kilbon, at the Karolinska Institute of Stockholm and medical scientists and ergonomists at the Occupational Health Institute in Helsinki have independently demonstrated that during work-related firefighting tasks wearing full protective equipment, the minimum VO2 Max for all operational firefighters should be 3.0 liters/min. Both Sweden and Finland's fire services now have a recommended VO2 Max standard of 3.0 liters/min for all firefighters. Two Scandinavian test protocols for assessing the aerobic fitness of firefighters have been developed: Eight minute Cycle Ergometer tests subjects exercise at 50 watts for the first minute, 100 watts for the second, 150 watts for the third and the final five minutes of the test

at 200 watts. The physiological rationale is that the oxygen cost of cycling at 200 watts is close to the 3 liter's/min. hence for a subject to physically complete this test he must have necessary VO₂ Max. A second test, a seven-minute treadmill walk in full protective equipment with a weight of approximately fifty pounds, was conducted. The subject walked for a two minute warm-up at five miles per hour then at eight miles per hour on and eight percent incline. This test also met the VO₂ max of 3.0 liters/min.

The Helsinki test involved a maximum of 14.5 minutes in which a subject:

Walking 100m on level surface; repeat carrying two rolls of hose.

Stair climb; nine stairs up and down 12 times.

Hammering truck tire; move 103 pound tire lying flat, 3 meters by striking it with a 13.2 pound hammer

Crawling over and under bars; 8 meter track, three light bars each set 2 meters apart, 60 centimeters off the ground; step over and crawl under to end of track, then return; repeat three times.

Hose rolling; firefighter walks and rolls up hose while traveling 25 meters.

All tasks were completed in a habitual work rate. Research showed this test to be valid and reliable.

In a study completed by the London Fire Brigade (Brodrovic, 1997) they wanted to ensure that the measures used in fitness testing would stand up to examination from both reliability and validity perspectives. The results were eight work-related physical fitness tests that have direct relationships to the types of physical activities undertaken by firefighters. These tests are not skill related but

aim to assess a person's' potential to be able to perform in the role given the necessary training and support. London developed a trainability factor translating the assessment of potential to the tests themselves. The study included 200 volunteers, both tenured firefighters and inexperienced lay people. They were men and women ages 18 to 48 with a mix of ethnic groupings. The London study required construction of props to simulate lifting and hoisting of ladders as the initial findings of the research study found it obvious that utilizing a multi-gym to replicate the actions associated with the ladder activities did not fully satisfy validity or reliability parameters, particularly in relation to realism and kinetics. The equipment along with all eight tests were put into place in London to help to determine whether applicants have the necessary physical strength, coordination, endurance and physical stature to be able to perform the tasks in a safe and satisfactory manner.

The Combat Challenge and On Target timed, task-based physical performance test has been used as an entrance type evaluation. The Director of the Department of Occupational Health & Safety, for The International Association of Firefighters (IAFF) has stated the IAFF does not support the use of the Combat Challenge in the job setting. The issue is that the challenge style tests have not been medically validated as a measurement of an appropriate level of firefighter physical fitness. They have not been legally validated as nondiscriminatory and there have been cases of actual physical harm to those participating in them (Duffy, 1996).

Having qualified and capable people on the public safety front line while at the same time being morally, legally and fiscally responsible to all involved must be the main goal. The fiscal liability for an unsuccessful hiring is the cost of recruitment, testing, interviewing, background checks, medical evaluation and certification, outfitting in uniform and then finally wages and benefits. The international Association of Firefighters in conjunction with the International Association of Fire Chiefs have developed a Candidate Physical Ability Test, CPAT. The CPAT program has been developed into a reference manual. The chapters in the manual include: the initiative, the performance component, candidate physical ability testing, overview of the process, the importance of diversity, the need for recruiting, suggested ways to recruit, the need for mentoring, why must a department provide a specific guide for preparing for the CPAT, How the test is administered, logistical and environmental factors and the test itself. The CPAT consists of eight separate events. The test is a sequence of events that require the candidate to progress along a predetermined path from event to event in a continuous manner. The CPAT is a pass/ fail test based on a validated maximum total time of 10 minutes and 20 seconds. In the event the candidate wears a 50-pound vest to simulate the weight of self-contained breathing apparatus and firefighter protective gear. An additional 25 pounds is added for the stair climb to simulate a high-rise pack. The sequence of eight events is stair climb, hose drag, equipment carry, ladder raise and extension, forcible entry, search, rescue and ceiling breach and pull (Duffy, 2000).

There is a confirmed need for capable and qualified firefighters on the local, regional and national level. There will be extreme competition for qualified workers through out the entire workforce. Specifically the Tucson Fire Department will be required to hire a large number of firefighters as twenty percent of the current force is eligible to retire. Finding qualified and capable firefighters will be more difficult in the future due to extreme competition and also for the fact that American as a whole are much less physically fit that in the past. Effective physical capability assessment is essential. Departments must have an evaluation instrument which is non discriminatory and complies with the Americans with Disabilities Act and the Department of Justice. Any organization must ensure they are hiring the best most qualified candidates who can promote company and organizational efficiency, growth and earning. Entry level physical capability tests must not be job skill related but must be physical ability related. Fire suppression is unique. Scientific background is necessary for a test to be valid. There are three physical ability tests, which have been validated and have a strong scientific background: the Stockholm test, Combat challenge and the IAFF/IAFC CPAT. CPAT is preferred due to its scientific study, industry acceptance and Department of Justice Acceptance. In Summary, the literature reviewed supports the need for the Tucson Fire Department to look to a more effective and efficient pre-entry physical ability evaluation. Moreover the review suggests that the fire service as a whole must remain contemporary in its evaluation of potential candidates. An effective process will most surely lead to fiscal and physical liabilities to the department, the candidate and the citizens. It

is clear that there have been many advances in the arena of pre-entry physical abilities evaluations. The CPAT is currently the most comprehensive and valid standard on the market.

PROCEDURES

In an effort to support the process of answering whether there was a need for a physical agility test and whether there was a need for a new physical agility test, an opinion survey was developed to assess the attitudes and perceptions regarding physical agility testing of personnel recently hired by the Tucson Fire Department.

Population

The population selected for this study were current recruit firefighters employed in training by the Tucson Fire Department. The total population consisted of 41 recruits of varying ages and ethnicity. The population gender make up was 10% women. This population set was selected due to availability and the need to utilize locally valid data. These recruits were intimately involved in the process being evaluated. The researcher in collaboration with the TFD's administration and training divisions developed the survey questions.

Process

The survey consists of six questions referencing the Tucson Fire Department physical agility test, referred to as F.I.R.E. Fire Incident Readiness Evaluation, for which the respondent was asked to strongly agree, agree, disagree or strongly disagree. The survey questions were:

- Adequate access to information on preparation for the F.I.R.E. test was provided.
- Successful completion of the F.I.R.E. test is representative of the physical capabilities (strength and conditioning) required to be successful in the TFD Recruit Academy.
- Successful completion of the F.I.R.E. test is representative of the physical capabilities (strength and conditioning) required to do the job of a firefighter on the Tucson Fire Department.
- Upon successful completion of the F.I.R.E. test one has a true feeling of accomplishment.
- To be successful on the F.I.R.E test one must have physical capabilities (strength and conditioning) beyond that of the average civilian worker.
- To be successful as a firefighter one must have physical capabilities (strength and conditioning) beyond that of the average civilian worker.

Limitations and Assumptions

The survey population was all Tucson Fire Department recruits employed in training by the Tucson Fire Department. Each had participated in the F.I.R.E. test during the hiring process. They were ten weeks into a twenty week program thus the assumption was they would have a good feel for the requirements being surveyed. Although the survey pool was limited to TFD recruits the assumption was that with the varied demographics represented within the 41 recruits, age, gender, ethnicity, and experience, created a valid pool for local evaluation.

Survey Results

97.4 percent of the recruits surveyed strongly agreed or agreed that to be successful as a firefighter required strength and conditioning beyond that of the average civilian worker.

90.1 percent were satisfied that adequate information was provided on preparation for the fire test.

9.7 percent felt the F.I.R.E. test was representative of the physical capabilities (strength and conditioning) required to be successful in the academy.

78 percent felt that successful completion of the F.I.R.E. test required no more physical capability (strength and conditioning) than the civilian worker.

78 percent felt that successful completion of the F.I.R.E. was not representative of the physical capabilities (strength and conditioning) required to do the job of firefighter on the Tucson Fire Department. Of that number 26.8 percent strongly disagreed with the concept that successful completion of the F.I.R.E test one must have physical capabilities beyond that of the average civilian worker.

Overall the respondents indicated that the current physical agility test utilized by the TFD was not an effective indicator of the type of strength and conditioning required to be successful as a recruit for the TFD nor was it an effective indicator of the level of strength and conditioning required to be successful as a front line firefighter for the TFD.

Table I
TFD F.I.R.E. Survey

| Survey Questions | Response | Response | Response | Response |
|---|----------------|---------------|---------------|-------------------|
| | Strongly Agree | Agree | Disagree | Strongly Disagree |
| Adequate Information Provided | 36.6 % (15) | 53.6% (22) | 7.3% (3) | 2.4% (1) |
| F.I.R.E. Represents Recruit Success | 0% (0) | 9.7% (4) | 48.7% (20) | 41.4% (17) |
| F.I.R.E. Represents Firefighter Success | 0% (0) | 12.2% (5) | 58.5% (24) | 29.2% (12) |
| Feeling of Accomplishment | 0% (0) | 21.9% (9) | 51.2% (21) | 26.8% (11) |
| F.I.R.E. Test vs Civilian Fitness | 2.4% (1) | 19.5% (8) | 63.4% (26) | 14.6% (6) |
| Firefighter Vs Civilian Fitness | 80.4% (33) | 17.05 (7) | 2.4% (10) | 0% (0) |

RESULTS

Both the literature review and the F.I.R.E. survey indicate that a contemporary pre-entry physical ability evaluation is necessary for the Tucson Fire Department entry level hiring process. The ultra-competitive task of hiring qualified individuals in the future dictates that there be an effective process in place. Without an effective process there is tremendous liability for litigation and nonproductive expenditure of resources.

Again the literature review as well as the survey indicate there is potential for negative consequences with the pre-entry physical ability evaluation currently in

use by the Tucson Fire Department. The survey suggests the current test is neither effective nor contemporary. The survey population overwhelmingly indicated the F.I.R.E. test is not effective. To answer the questions as to whether there is a more effective and efficient pre-entry physical ability evaluation instrument available, which is both legal and valid, the CPAT is the contemporary evaluation instrument currently available.

DISCUSSION

The literature review and opinion survey suggest it is of the highest importance to place qualified and capable people on the public safety front line while at the same time being responsible to all recruitment groups, including ethnic, gender and physical disability, while at the same time being fiscally responsible. There is a tremendous expense to both the recruit and the department when a recently hired recruit is let go from recruit training. For the recruit, he or she may have given up an established career elsewhere to take a chance on joining the fire service. Their families may rely on that paycheck for week to week sustenance. If the recruit was hired on into a position without a valid means of knowing if they could actually survive, have they been done a costly injustice? For the hiring department, there is the cost of recruitment, testing, tier one interviewing, tier two interviewing, background checks, Medical evaluation and certification, outfitting in uniform and then finally wages and benefits. For commercial enterprise, the usual measure of success is fairly straightforward: It is the bottom line – the profit. Each division and subdivision can be judged to a large extent by its contribution to that profitability (Levatan, 2000). That is not true for fire

departments because there is no specific profit and the definition of bottom line differs among elected officials, employees, taxpayers, residents and business owners. There is tremendous liability involved in today's fire service hiring process. Recently the Department of Health and Human Services confirmed that young Americans are less physically fit, or in no better condition, than young Americans of 20 or 30 years ago (Carmean, 1999). The process of attracting, recruiting, hiring, training and retaining new firefighters has evolved into a highly litigious arena (Davis, 1998). It is imperative for the Tucson Fire Department to embrace a contemporary effective and efficient pre-entry physical capability test. This is necessary to avoid liability and litigation and to insure they are hiring the best possible candidates within a very competitive hiring job market. The CPAT is currently the most comprehensive and valid standard on the market. CPAT is preferred due to its scientific study, industry acceptance and Department of Justice Acceptance. In Summary, the literature reviewed supports the need for the Tucson Fire Department to look to a more effective and efficient pre-entry physical ability evaluation.

RECOMMENDATIONS

The purpose of this research study was to determine if a contemporary pre-entry physical ability evaluation is necessary for the Tucson Fire Department entry level hiring process. Additionally the study looked at the potential for negative consequences with the pre-entry physical ability evaluation currently in use by the Tucson Fire Department and if there is a more effective and efficient pre-entry physical ability evaluation instrument available, which is both legal and

valid. The findings indicate that a contemporary and valid pre-entry physical ability evaluation should be requisite to all fire service hiring process. The process currently in place within the Tucson Fire Department is neither up to date nor effective. CPAT is preferred due to its scientific study, industry acceptance and Department of Justice acceptance. The CPAT is currently the most comprehensive and valid standard available. The Tucson Fire Department should adopt the CPAT after completion of the following: Review current job analyses, job descriptions and current physical abilities test. Develop an equipment survey. Procure needed equipment. Develop a TFD pilot CPAT. Procure and design needed props. Randomly select department members to take CPAT. Film local firefighters acting out the CPAT. Validate local pass/fail time. Develop local overall validation of CPAT. In addition to the implementation of the CPAT proper, the IAFF and IAFC also recommend inclusion of preparation and recruitment with the CPAT. Additional recommendation for the department is to develop pretest preparation guide. Develop recruitment procedures. Develop orientation guide. Develop test administration procedures. All these recommendations must be carried out keeping in mind the CPAT was developed to allow a fire department to obtain a pool of trainable candidates that are physically able to perform essential job tasks at the fire scenes.

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APPENDIX A

Tucson Fire Department Fire Incident Readiness Evaluation (F.I.R.E.) Survey

The following survey is to be completed anonymously. Please be as candid as possible in your responses. The intent of the survey is to determine current attitudes towards the F.I.R.E. test and assist in developing procedures for the future. Additionally, the information provided may be utilized for a National Fire Academy Applied Research Project. Thank you.

Adequate access to information on preparation for the F.I.R.E. test was provided.

strongly agree _____ agree _____ disagree _____ strongly disagree _____

Successful completion of the F.I.R.E. test is representative of the physical capabilities (strength and conditioning) required to be successful in the TFD Recruit Academy.

strongly agree _____ agree _____ disagree _____ strongly disagree _____

Successful completion of the F.I.R.E. test is representative of the physical capabilities (strength and conditioning) required to do the job of a firefighter on the Tucson Fire Department.

strongly agree _____ agree _____ disagree _____ strongly disagree _____

Upon successful completion of the F.I.R.E. test one has a true feeling of accomplishment.

strongly agree _____ agree _____ disagree _____ strongly disagree _____

To be successful on the F.I.R.E. test one must have physical capabilities (strength and conditioning) beyond that of the average civilian worker.

strongly agree _____ agree _____ disagree _____ strongly disagree _____

To be successful as a firefighter one must have physical capabilities (strength and conditioning) beyond that of the average civilian worker.

strongly agree _____ agree _____ disagree _____ strongly disagree _____